MONTHLY WEATHER REVIEW.

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INTRODUCTION.

The present summary for 1902 is based essentially upon data received from about 166 regular Weather Bureau stations, 33 regular Canadian stations, and voluntary stations from such States as have forwarded their annual summaries in time. The statistical tables and charts have been prepared under the supervision of Mr. W. B. Stockman, Forecast Official, in charge of the Division of Meteorological Records; the tables of movements of high and low areas by Mr. George E. Hunt, Chief Clerk, Forecast Division; and the summary of flood movements by Dr. H. C. Frankenfield, Forecast Official.

FORECAST DIVISION.

Prof E. B. GARRIOTT, in charge.

HIGHS AND LOWS OF 1902.

The high and low data for the year 1902 have been compiled under the general plan in use since 1895, and they differed but slightly in their general features from those of the preceding seven years.

The tables herewith give the summary for each month of the year 1902, and likewise a summary for the eight years from 1895 to 1902, inclusive.

Summary of highs and lows for 1902.

Month.	Highs.							Lows.						
	Mean first observed.		Mean last observed.		Path, average.		Hourly velocity.	Mean first observed.		Mean last observed.		Path, average.		Hourly velocity.
	Lat. N.	Long. W.	Lat. N.	Long. W.	Length.	Duration, days.		Lat. N.	Long. W.	Lat. N.	Long. W.	Length.	Duration, days.	
	°	°	°	°	*Miles.*			°	°	°	°	*Miles.*		
Jan	46	116	40	72	2,978	4.0	35.4	45	104	44	69	2,109	2.8	33.7
Feb	45	107	36	83	2,260	3.6	27.2	43	102	44	66	2,714	4.0	31.5
Mar	45	113	41	65	3,496	4.6	31.8	38	110	45	74	2,568	3.5	29.7
Apr	45	110	43	76	2,331	3.8	29.0	47	113	46	74	2,398	3.6	27.8
May	50	104	40	68	2,522	4.3	24.7	42	103	44	72	2,032	3.0	28.2
June	51	118	35	70	3,038	4.2	29.9	37	106	45	66	2,622	4.0	27.7
July	47	111	38	77	2,265	3.4	29.0	41	112	45	70	2,224	3.3	31.1
Aug	51	116	40	82	2,275	4.2	23.8	47	112	44	86	1,891	2.5	28.5
Sept	50	117	45	72	2,606	3.7	32.8	46	112	45	76	2,452	4.0	26.6
Oct	48	112	40	71	2,834	3.8	25.8	37	103	45	70	2,147	3.1	28.7
Nov	48	114	41	82	2,245	3.1	32.6	42	109	45	73	2,264	3.4	28.2
Dec	48	111	40	70	2,548	3.6	29.9	43	114	44	72	2,633	3.4	32.8
Means	48	112	40	74	2,616	3.8	29.3	42	108	45	72	2,338	3.3	29.5

Summary, 1895 to 1902, inclusive.

Year.	Highs.					Lows.				
	Mean first observed.		Mean last observed.		Hourly velocity.	Mean first observed.		Mean last observed.		Hourly velocity.
	Lat. N.	Long. W.	Lat. N.	Long. W.		Lat. N.	Long. W.	Lat. N.	Long. W.	
	°	°	°	°	*Miles.*	°	°	°	°	*Miles.*
1895	47	110	39	80	24	45	107	45	73	26
1896	48	111	42	75	24	46	111	46	74	26
1897	48	113	38	78	24	46	110	46	71	26
1898	46	114	40	72	25	45	111	46	67	26
1899	47	114	41	72	24	44	111	46	68	27
1900	46	108	42	75	28	44	106	45	73	30
1901	48	112	41	75	28	42	105	44	74	28
1902	48	112	40	70	29	42	108	45	72	30
Means	47	112	40	75	26	44	108	45	72	27

George E. Hunt, Chief Clerk Forecast Division.

RIVER AND FLOOD SERVICE.

The work of the River and Flood Service during the year has been noteworthy both by reason of the high standard of excellence attained by the officials in charge of the various centers in their warnings of impending floods, and by the broad extension of its field of operations. The demands for further enlargement have far exceeded our present ability in this respect.

The great floods of the year were those of early March in the rivers of the Middle and South Atlantic and east Gulf States, the Cumberland, Tennessee and upper Ohio; those of July in the Des Moines, upper Mississippi, and the extremely disastrous ones in the rivers of Texas, where the losses aggregated about $15,000,000; and those of late November and early December in the Red River. Reference to the MONTHLY WEATHER REVIEWS for the respective dates will show with what accuracy and timeliness the warnings for these floods were issued.

New river centers and stations were established during the year as follows: Boston, Mass., with territory comprising the rivers of New England, having 14 river and 7 rainfall stations; Knoxville, Tenn., with territory comprising the Holston and French Broad rivers, having 5 river and 4 rainfall stations; Sioux City, Iowa, with territory comprising the Missouri River and tributaries from Sioux City to the headwaters, having 7 river stations. The Harrisburg district was also thoroughly reorganized and now has 8 regular and 1 special reporting river stations. A few new stations were established in other districts, and several less important ones were discontinued.

A considerable sum has been expended for improvements at the various stations, chiefly for new river gages, and the entire equipment, with but few exceptions, is now in excellent condition.

Before closing, mention should be made of the splendid service performed by the observers at the substations. These men and women, receiving only a meager compensation, by the careful and conscientious performance of the duties assigned to them, frequently under circumstances involving personal hardship and danger, have in no small measure contributed to the success of the work of the River and Flood Service.

The highest and lowest river stages for the year, together with the mean stage and annual range, at one hundred and thirty-seven selected stations are given in Table VII.—*H. C. Frankenfield, Forecast Official.*